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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,177	11/02/2001	Shinichi Terashima	52433/663	9514

26646 7590 06/02/2004

KENYON & KENYON  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER
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GRAYBILL, DAVID E

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/000,177

Applicant(s)

TERASHIMA ET AL.

Examiner

David E Graybill

Art Unit

2827

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6, 10, 12, 16-19 and 22-45 is/are pending in the application.
- 4a) Of the above claim(s) 16, 18, 19 and 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 10, 12, 17 and 22-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-2-1.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Applicant's election with traverse of Group II, claims 1-3, 6, 10, 12, 17 and 22-39 in the paper filed on 3-17-4 is acknowledged. The traversal is on the ground(s) that, "the claims are sufficiently related to be properly presented in a single application." This is not found persuasive because the reasons for insisting on restriction as stated in MPEP 808 have been clearly met. The requirement is still deemed proper and is therefore made FINAL.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 30 and 31 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. Specifically, the limitation "consisting of gold" is incompatible with the limitation that the concentration of gold is 99% or less because the language *consisting of* excludes any element or ingredient other than gold.

Claims 30 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The undescribed subject matter is the limitation that the concentration of gold of a bonding wire consisting of gold is 99% or less. To further clarify, the limitation

"consisting of gold" is incompatible with the limitation that the concentration of gold is 99% or less because the language *consisting of* excludes any element or ingredient other than gold.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 6, 10, 12, 17 and 22-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is insufficient antecedent basis for the following:

Claim 17, "the diameter of the bonding wire";

Claim 24, "the wire,"

Claims 24 and 25, "the reinforcement covers" "a joint bulb [ambiguous]" and "the inorganic material coating";

Claims 24-27, "the metal coating";

Claims 26 and 27, "the interface," "the metal surface" and "the two metals";

Claims 26 and 28, "the bonding wire";

Claims 30 and 31, "the concentration of gold," "the outermost surface" and "a bonding wire [ambiguous]";

Claim 32, "the bonding wires";

Claims 32 and 33, "the area covering the semiconductor" and "the joint bulbs";

Claims 36 and 37, "the substrate," "the lead frame," and "the TAB tape";

Claims 38 and 39, "the surface of the semiconductor terminal."

In claims 1, 24, 25, 32 and 33 the scope of the term "joint bulb" is unclear because there is no art recognized definition of the term, and it is not otherwise explicitly defined in the disclosure.

In claims 30 and 31 the limitation "consisting of gold" is incompatible with the limitation that the concentration of gold is 99% or less because the language *consisting of* excludes any element or ingredient other than gold.

Claims 6 and 12 are incomplete because they depend on canceled claims 5 and 11, respectively. See MPEP 608.01(n)V.

Claims 6, 12, 26, 27, 30 and 31 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections *supra*, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims. Also see *In re Wilson*, 424

F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious). See also MPEP 2143.03 and 2173.06.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 10, 17, 22-25, 28, 29 and 32-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Zechman (5824568).

At column 2, lines 2-25; and column 3, penultimate line to column 4, line 2, Zechman discloses the following:

A semiconductor device 1, using a bonding material 4 for linking a semiconductor terminal 3 to a connecting terminal 5 for an outside circuit, characterized by reinforcing (inherently) the bonding material and/or a joint bulb between the terminal and a connecting material with a reinforcing (inherent) material 10; the bonding material is a bonding wire and/or a bump; the bonding material consists of any one of gold, tin, copper, aluminum and an alloy of any of these metals; the bonding material and the reinforcing material consist of different material (inherent); the reinforcing material consists of a metal and/or an inorganic material and the

reinforcement covers the wire 4 or a joint bulb with any of the metal coating and the inorganic material coating; the bonding wire consists of any one of gold, copper, aluminum, silver and an alloy of any of these metals; coating the area covering the semiconductor 1, the bonding wires, the connecting terminals and the joint bulbs with resin 8; forming the connecting terminal using a substrate, a lead frame or a TAB tape; forming the semiconductor terminal on any one of a semiconductor chip 1, the substrate, the lead frame or the TAB tape; the surface of the semiconductor terminal consists of copper, aluminum, nickel, cobalt, gold, silver and an alloy of any of these metals.

A semiconductor device, using a bonding wire for linking a semiconductor terminal to a connecting terminal for an outside circuit characterized by reinforcing the bonding wire, either partially or wholly, with a reinforcing material after bonding work; the bonding material and the reinforcing material consist of different materials; the reinforcing material consists of a metal and/or an inorganic material and the reinforcement covers the wire or a joint bulb with any of the metal coating and the inorganic material coating; the bonding wire consists of any one of gold, copper, aluminum, silver and an alloy of any of these metals; coating the area covering the semiconductor, the bonding wires, the connecting terminals and the joint bulbs with resin; forming the connecting terminal

using a substrate, a lead frame or a TAB tape; forming the semiconductor terminal on any one of a semiconductor chip, the substrate, the lead frame or the TAB tape; the surface of the semiconductor terminal consists of copper, aluminum, nickel, cobalt, gold, silver and an alloy of any of these metals.

A semiconductor device, using a bonding wire for linking a semiconductor terminal to a connecting terminal for an outside circuit, characterized by: the diameter of the bonding wire being less than 20  $\mu\text{m}$ ; and reinforcing the bonding wire, either partially or wholly, with a reinforcing material after bonding work.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Head SAE Linda Hodge-Taylor whose telephone number is 571-272-1585.**

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.



Application/Control Number: 10/000,177  
Art Unit: 2827

Page 8

A handwritten signature in black ink, appearing to read 'David E. Graybill', written in a cursive style.

David E. Graybill  
Primary Examiner  
Art Unit 2827

D.G.  
27-May-04